B1

POWERED BY Dialog

Power tool e.g. electric hammer, has weight of dynamic vibration reducer reciprocated using biasing force of spring, operated by variation in pressure fluctuation in actuating mechanism which drives tool bit

Patent Assignee: MAKITA CORP
Inventors: AOKI Y

Patent Family (7 patents, 36 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 1464449	A2	20041006	EP 20047681	A	20040330	200469	B
JP 2004299036	A	20041028	JP 200398296	A	20030401	200471	E
CN 1533866	A	20041006	CN 200410032139	A	20040401	200506	E
JP 2005205580	A	20050804	JP 200417688	A	20040126	200551	E
RU 2268818	C2	20060127	RU 2004109905	A	20040331	200608	E
US 20060076154	A1	20060413	US 2004816532	A	20040331	200626	E
CN 1285446	C	20061122	CN 200410032139	A	20040401	200720	E

Priority Application Number (Number Kind Date): JP 200398296 A 20030401; JP 200417688 A 20040126

Patent Details

Patent Number	Kind	Language	Pages	Drawings	Filing Notes
EP 1464449	A2	EN	35	18	
Regional Designated States,Original	AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR				
JP 2004299036	A	JA	17		
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Alerting Abstract: EP A2

NOVELTY - An actuating mechanism including a driving motor (111), a motion converting mechanism (113) and a striking mechanism (115), drives a tool bit (119) linearly to perform predetermined operations. A weight of a dynamic vibration reducer is reciprocated under biasing force of a spring to reduce vibration of the actuating mechanism. The weight is operated by variation of the pressure in the actuating mechanism.

USE - Power tool such as electric hammer.

ADVANTAGE - Enables steady and forced operation of the dynamic vibration reducer, irrespective of the vibration of the actuating mechanism. The number of components in the power tool is reduced and size of the power tool is reduced.

DESCRIPTION OF DRAWINGS - The figure shows a sectional view of an electric hammer.

101 electric hammer

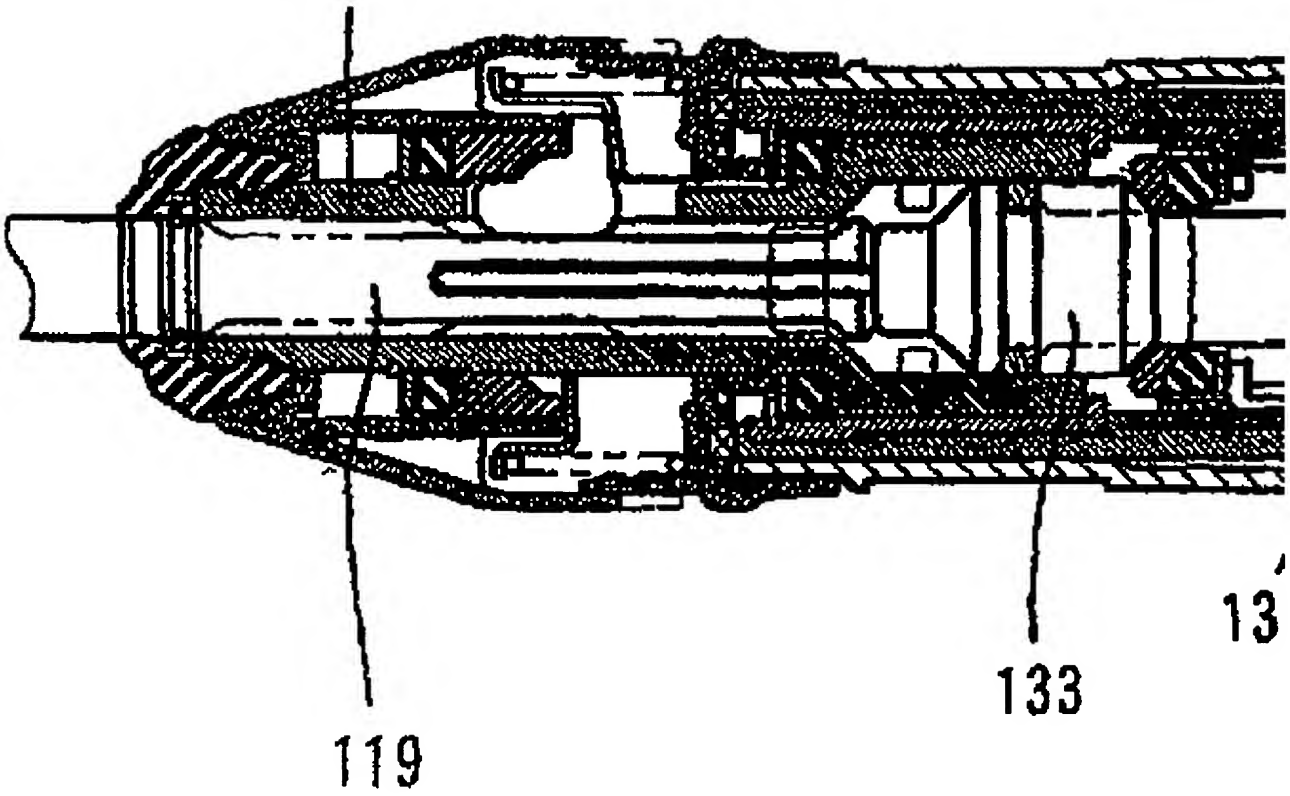
111 driving motor

113 motion converting mechanism

115 striking mechanism

119 tool bit

Main Drawing Sheet(s) or Clipped Structure(s)


13
133
119

International Patent Classification

IPC	Level	Value	Position	Status	Version
B25D-0011/00	A	I	F	B	20060101
B25D-0011/00	A	I	F	R	20060101
B25D-0011/12	A	I	L	R	20060101
B25D-0011/12	A	I		R	20060101
B25D-0017/24	A	I	F	R	20060101
B25D-0017/24	A	I		R	20060101
B23B-0045/16	A	I	L		20060101
B25D-0011/00	A	I	F		20060101
B25D-0011/12	A	I	L		20060101
B25D-0016/00	A	I	L		20060101
B25D-0017/00	A	I	L		20060101
B25D-0017/24	A	I	L		20060101
B25D-0011/00	C	I	L	B	20060101
B25D-0011/00	C	I	L	R	20060101
B25D-0011/00	C	I		R	20060101
B25D-0017/00	C	I	F	R	20060101
B25D-0017/00	C	I		R	20060101
B23B-0045/00	C	I			20060101
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B25D-0017/00	C	I			20060101

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China
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Original IPC: B23B-45/00(I,M,98,20060101,C) B23B-45/16(I,CN,20060101,A,L) B25D-11/00 (I,CN,20060101,A,F) B25D-11/00(I,M,98,20060101,C) B25D-11/12(I,CN,20060101,A,L) B25D-16/00 (I,CN,20060101,A,L) B25D-16/00(I,M,98,20060101,C) B25D-17/00(I,CN,20060101,A,L) B25D-17/00 (I,M,98,20060101,C) B25D-17/24(I,CN,20060101,A,L)
Current IPC: B23B-45/00(A,I,M,98,20060101,C) B23B-45/16(I,CN,20060101,A,L) B25D-11/00 (I,CN,20060101,A,F) B25D-11/00(I,M,98,20060101,C) B25D-11/12(I,CN,20060101,A,L) B25D-16/00

(I,CN,20060101,A,L) B25D-16/00(I,M,98,20060101,C) B25D-17/00(I,CN,20060101,A,L) B25D-17/00 (I,M,98,20060101,C) B25D-17/24(I,CN,20060101,A,L)|CN 1533866 A (Update 200506 E)
Publication Date: 20041006
Assignee: MAKITA CORP; JP (MAKI-N)
Language: ZH
Application: CN 200410032139 A 20040401 (Local application)
Priority: JP 200398296 A 20030401 JP 200417688 A 20040126
Original IPC: B25D-11/00(A) B23B-45/16(B) B25D-11/12(B) B25D-16/00(B) B25D-17/00(B) B25D-17/24(B)
Current IPC: B25D-11/00(R,A,I,M,EP,20060101,20051008,C) B25D-11/12 (R,I,M,EP,20060101,20051008,A) B25D-17/00(R,I,M,EP,20060101,20051008,C) B25D-17/24 (R,I,M,EP,20060101,20051008,A)

European Patent Office
Publication Number: EP 1464449 A2 (Update 200469 B)
Publication Date: 20041006
Kraftwerkzeug Power tool Outil electrique
Assignee: MAKITA CORPORATION, 3-11-8, Sumiyoshi-cho, Anjo-shi, Aichi-ken, 446-8502, JP (MAKI-N)
Inventor: Aoki, Yonosuke, c/o Makita Corporation, 3-11-8 Sumiyoshi-cho, Anjo-shi, Aichi-ken 446-8502, JP
Agent: Schmidtchen, Jurgen, Kramer Barske Schmidtchen, European Patent Attorneys, Patenta, Radeckestrasse 43, 81245 Munchen, DE
Language: EN (35 pages, 18 drawings)
Application: EP 20047681 A 20040330 (Local application)
Priority: JP 200398296 A 20030401 JP 200417688 A 20040126
Designated States: (Regional Original) AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR
Original IPC: B25D-11/12(A) B25D-17/24(B)
Current IPC: B25D-11/00(R,I,M,EP,20060101,20051008,C) B25D-11/12 (R,I,M,EP,20060101,20051008,A) B25D-17/00(R,I,M,EP,20060101,20051008,C) B25D-17/24 (R,I,M,EP,20060101,20051008,A)
Original Abstract: It is an object of the present invention to provide a power tool (101) having a further improved vibration reducing performance. The representative power tool may comprise a tool bit (119), an actuating mechanism (111,113,115), a dynamic vibration reducer (141). The actuating mechanism drives the tool bit linearly by means of pressure fluctuations so as to cause the tool bit to perform a predetermined operation. The dynamic vibration reducer has a weight (145) that reciprocates under a biasing force of an elastic element (153) to reduce vibration of the actuating mechanism. The weight may be driven by means of pressure fluctuations caused in the actuating mechanism. According to the invention, the weight of the dynamic vibration reducer can be actively driven by pressure fluctuations in the actuating mechanism for driving the tool bit. Therefore, regardless of the magnitude of vibration acting on the power tool, the dynamic vibration reducer can be forcedly and steadily operated.
Claim: 1.A power tool, comprising: * a tool bit, * an actuating mechanism that drives the tool bit linearly by means of pressure fluctuations so as to cause the tool bit to perform a predet ermined operation and * a dynamic vibration reducer having a weight that reciprocates under a biasing force of an elastic element to reduce vibration of the actua ting mechanism, **characterized in that** the weight is driven by means of pressure fluctuations caused in the actuating mechanism.

Japan
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WORKING TOOL
Assignee: MAKITA CORP (MAKI-N)
Inventor: AOKI YOUNOSUKE
Language: JA (17 pages)
Application: JP 200398296 A 20030401 (Local application)
Original IPC: B25D-17/24(A)
Current IPC: B25D-17/00(R,I,M,JP,20060101,20051220,C,F) B25D-17/24 (R,I,M,JP,20060101,20051220,A,F)|JP 2005205580 A (Update 200551 E)
Publication Date: 20050804
WORKING TOOL
Assignee: MAKITA CORP (MAKI-N)
Inventor: AOKI YOUNOSUKE
Language: JA (16 pages)
Application: JP 200417688 A 20040126 (Local application)
Original IPC: B25D-17/24(A) B25D-11/12(B)
Current IPC: B25D-11/00(R,I,M,JP,20060101,20051220,C,L) B25D-11/12 (R,I,M,JP,20060101,20051220,A,L) B25D-17/00(R,I,M,JP,20060101,20051220,C,F) B25D-17/24 (R,I,M,JP,20060101,20051220,A,F)

Russia
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Assignee: MAKITA CORP; JP (MAKI-N)
Language: RU
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Current IPC: B25D-11/00(R,I,H,RU,20060101,20051014,A,F) B25D-11/00 (R,I,H,RU,20060101,20051014,C,L) B25D-11/12(R,I,M,EP,20060101,20051008,A) B25D-17/00 (R,I,M,EP,20060101,20051008,C) B25D-17/24(R,I,M,EP,20060101,20051008,A)

United States
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Power tool
Assignee: Makita Corporation, Anjo-shi, JP Aoki, Yonosuke, Anjo-shi, JP Residence: JP Nationality: JP
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Language: EN
Application: US 2004816532 A 20040331 (Local application)
Priority: JP 200398296 A 20030401 JP 200417688 A 20040126
Original IPC: B25D-11/00(B,I,H,US,20060101,20060413,A,F)
Current IPC: B25D-11/00(B,I,H,US,20060101,20060413,A,F) B25D-11/00 (B,I,H,US,20060101,20060413,C,L) B25D-11/12(R,I,M,EP,20060101,20051008,A) B25D-17/00 (R,I,M,EP,20060101,20051008,C) B25D-17/24(R,I,M,EP,20060101,20051008,A)
Original US Class (secondary): 173212 173201
Original Abstract: It is an object of the present invention to provide a power tool having a further improved vibration reducing performance. The representative power tool may comprise a tool bit, an actuating mechanism, a dynamic vibration reducer. The actuating mechanism drives the tool bit linearly by means of pressure fluctuations so as to cause the tool bit to perform a predetermined operation. The dynamic vibration reducer has a weight that reciprocates under a biasing force of an elastic element to

reduce vibration of the actuating mechanism. The weight may be driven by means of pressure fluctuations caused in the actuating mechanism. According to the invention, the weight of the dynamic vibration reducer can be actively driven by pressure fluctuations in the actuating mechanism for driving the tool bit. Therefore, regardless of the magnitude of vibration acting on the power tool, the dynamic vibration reducer can be forcedly and steadily operated.
Claim: 1.**1**. a power tool, comprising: * a tool bit, * an actuating mechanism that drives the tool bit linearly by means of pressure fluctuations so as to cause the tool bit to perform a predet ermined operation and * a dynamic vibration reducer having a weight that reciprocates under a biasing force of an elastic element to reduce vibration of the actua ting mechanism, the weight being driven by means of pressure fluctuat ions caused in the actuating mechanism.

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